

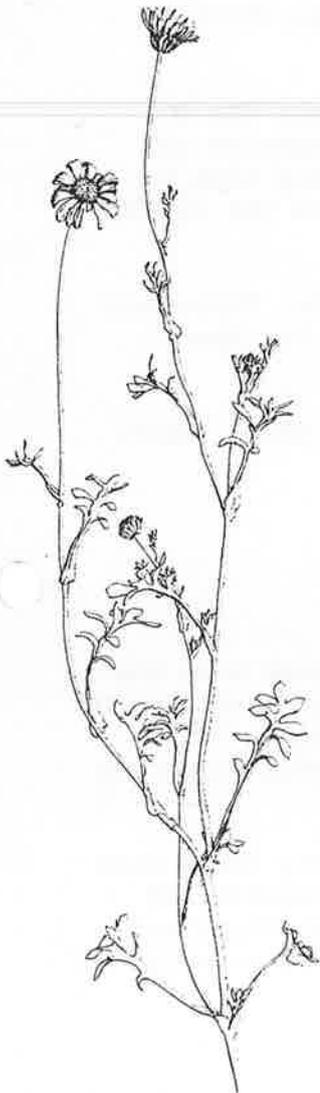
ASSOCIATION OF SOCIETIES FOR GROWING AUSTRALIAN PLANTSTHE AUSTRALIAN DAISY STUDY GROUP NEWSLETTER NO.29

Dear Members,

This spring my pots of daisies have given endless delight, more so this year because I had them set out on a north facing patio outside the sunroom window. I had placed them here to keep an eye on their progress, and spent intriguing moments watching the pollinators at work. The most conspicuous early in the season was a type of hoverfly which had a preference for the fare offered by the large mauve blooms of Brachyscome 'Valencia'. They were browsing on the florets just maturing at the periphery of the flower-head, flitting from bloom to bloom and occasionally browsing the more mature heads, but avoiding the aged flower-heads. Soon they were joined by other small flies. (Sorry I'm not up with ID's of insects.) The sight of all this activity promised a good seed set, but needless to say yields among the various species were variable, some producing little or no seed. Why this is so is a task for a more leisurely time.

Of course, an adverse aspect of all this insect activity is that hybridization occurs and makes it difficult for the Study Group to maintain an uncontaminated seed source to pursue the aims of the Group. In my garden B.diversifolia var. diversifolia challenges B.segmentosa for the crown of most vigorous hybridiser (see NL25,p.49 re "wanton profligacy" of B.segmentosa). B.gracilis and B.diversifolia var. maritima have lost their distinguishing characters and it seems we have a cross between B.nivalis and B. diversifolia var. diversifolia. The sceptics in the Group say "prove it" and of course I'd sown all the seed. The moral is retain a sample of the seed you sow. Remember, most of the seed issued by the Seed Bank is from garden collection and, as yet, we know little about the genetic sorting that occurs. Some breed true, but be prepared for surprises and look at your seed occasionally. Is there variation in the new generation? Of course, those with bush blocks and local brachyscomes may wish to think hard about which species they grow.

Putting aside problems associated with this, the Study Group has taken the plunge and started on our next book. The quality of the content depends on the contribution of all the members. Shortly, individual members and most group members will be getting a SPECIAL DELIVERY - some brachyscome seed, instructions and record sheets. It will require a little commitment, enthusiasm (or why be in the Study Group?) and accuracy. The tasks will be simple, but your records must be accurate - no guessing. We need cultivation information on brachyscomes growing in a diverse range of conditions from as many members as possible. We especially need information from growers in tropical Queensland, other areas with summer rainfall, Western Australia, arid areas, alkaline soils, rocky areas, mountains, the coast, etcetera. Let's not be too Melbourne biased.



B.gracilis x 2/3

From time to time we'll be making a plea for specific information. Remember HELP HELP!!!!" in the last NL,p.46? Well, B.aculeata should be flowering now.

As well as this we will be tossing around our ideas, observations, hypotheses on some of the problems that challenge us. This will be more as a forum for discussion than statements of fact. Please respond. Do you agree, disagree? What can you contribute? Judy starts off with an article on the diverse and interesting B.angustifolia group on p.10.

It makes for a stimulating year ahead. We have much to discover and many solutions to find. We are narrowing the focus temporarily and, to put you in the right mood, we would urge you to stop and examine the fruit of brachyscomes occasionally with a hand lens or microscope. What a variety of sculptured forms in the fruit of this genus! Ponder on the reasons and purposes for this variation in species.

Successful sowing,

Esma.

OUR THANKS TO JOY COOK

After nine and a half years our Treasurer, Joy Cook, has retired. When the Study Group began Joy and Maureen were the foundation members. Since they live almost opposite each other they were very handily placed to become Treasurer and Leader respectively. Both gardens show this long association in their wealth of colour and the many daisies common to them.

Joy has looked after the money in a most capable way. At first there was no money to look after, but in recent times we have become quite prosperous and the time involved in the job has become substantial. Now Joy's spare time is fully occupied she can no longer keep up with the task. Anyway, she has earned a rest.

Joy's talents as treasurer were complemented by her sense of humour. These days she can no longer attend the monthly meetings and we miss her (and her Nanny cake).

The Group is extremely grateful to Joy for keeping us solvent all these years.

OLEARIA TENUIFOLIA

by Elise Walker

"Sticky Leaf Daisy-bush"

During November 1990, Gillian Earl (Flora and Fauna Guarantee Officer with the Department of Conservation and Environment, Bairnsdale Region) organized a trip to the Mitchell River National Park with a few members from Bairnsdale SGAP. We were invited along to take cuttings of what is said to be the only Victorian population of Olearia tenuifolia.

Gillian stated that as this colony is vulnerable and could be easily threatened or wiped out, it is therefore considered essential that it be propagated and relocated elsewhere. Gillian is in the process of studying the East Gippsland area to find a suitable location using samples of plant and material existing near and around the National Park colony.

Reference: Encyclopaedia Botanica, Frances Bodkin.

"Olearia tenuifolia Asteraceae.

A native of N.S.W. and Qld., it is adaptable to most well-drained soils but prefers an open, sunny position. It is frost resistant but drought tender.

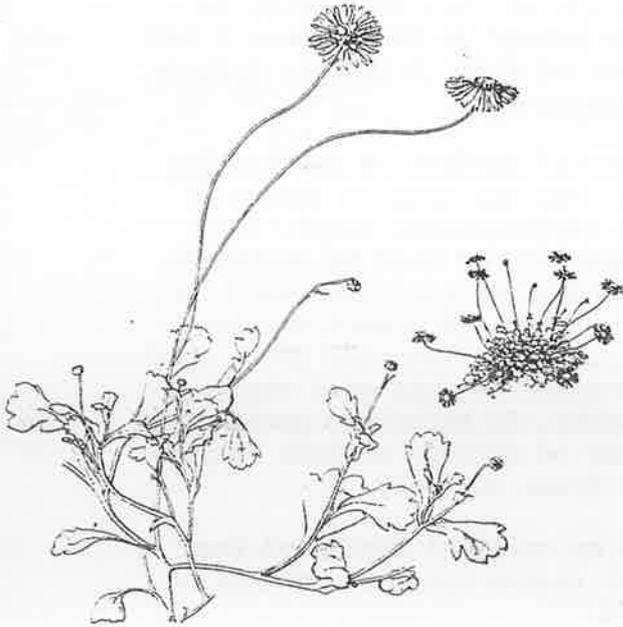
An evergreen shrub, it grows to a height of 1m with a spread of 1m.

The stem is erect and branching with a rounded shape and an open textured crown; the leaves are linear, sticky and 2cm long; the flowers are bluish mauve, daisy-like and large, appearing in spring and summer."

SPECIES OR FORMS NEW TO THE GROUP

Brachyscome whitei

by Esma Salkin.



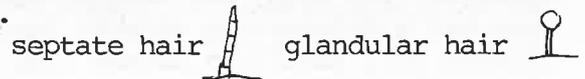
Brachyscome whitei x 1/2

One of the chief characteristics of a good editor is to be on the lookout for an article. It pays not to skite too openly about your marvellous pot of daisies, for all too soon you are at it again. The trouble is that the request to write it up is made so graciously, you can't refuse.

In NL 25,43-4, I wrote with a great deal of enthusiasm about my first sightings of B.whitei, growing on red sands in north-west New South Wales in August, 1989. It was a lovely 'tufty' plant with long ascending branching stems topped with 3cm diameter pink daisies. A distinctive feature of this daisy is the white 'eye' around the disc where the pink rays shade to white. The specific name commemorates a Queensland botanist, Mr.C.T.White.

On 3/3/90 about 30 seeds were sown using the Bog Method. Two seeds germinated after 48 days. More seed was sown on 13/4/90; 9 seeds germinated within 10 days, but were nipped to ground level by, I suspect, earwigs. The two survivors were later transplanted to a large terracotta pot (30cm x 15cm), using 3 parts commercial mix to 1 part perlite plus Osmocote and Easigreen, and the pot was mulched with 1cm of coarse propagating sand. The plants were pampered and fertilized regularly with 'Thrive' and rewarded me in spring with numerous flowering stems, but my plants lacked the 'tuft' of basal stem leaves that was such an attractive feature of plants in their natural habitat.

Brachyscome whitei is believed to be an annual (my plants were certainly annual) growing to about 20cm high and 30cm across. It is septate-hairy, with many ascending, branching stems bearing terminal flowers. Leaves are radical and cauline. Radical leaves (at the base of the plant) are about 6cm long with the petiole. They are numerous, ovate-cuneate to ovate-elliptical, pinnatifid or acutely toothed at the tip. In my plant radical leaves (3.7 x 0.8cm) were sparse and pinnatifid, that is with 5 deep rounded lobes. Each peduncle has a few cauline leaves, sessile and toothed at the tip, diminishing in size up the stem and bract-like below the flower-head. Leaf surfaces are densely septate-hairy, but my plant was sparsely septate hairy.



Involucral bracts (about 18), 5mm x 1mm, are septate-hairy, and the tips are purple and minutely fimbriate. Ray florets (30-35) are pink, shading to white at the disc. The flower-head is 2-3cm across and the receptacle, 5mm x 1-1.5mm, is pitted. Peduncles, 16-23cm long, are glabrous.

Fruit is black with a wing. The body surface is tuberculate, the tubercles having glandular hairs. The surface of the wing is microscopically undulate (wavy) and the edge has numerous glandular hairs. The pappus is white and easily seen.



B.whitei fruit x 20

As only two plants survived from my initial sowings I cannot fully assess its horticultural potential, but it is a very attractive short-lived daisy for a pot. An adverse feature of the plant is the tendency for the many ascending stems to collapse and 'elbow' below the maturing head.



As I was anxious to collect seed I cut off these stems and stood them in water until the achenes matured. If this phenomenon is due to water stress the plants may do better in the garden. I had observed this collapsing of the flowering stem in Calotis inermis whilst botanising in south-west Queensland last spring.

In summary, B.whitei when in full bloom in its natural habitat is outstanding. In Melbourne the blooms are equally as attractive, but the lack of leaves at the base of the plant reduces its value as a good horticultural plant. Like many annuals, the flowering is brief. A copious quantity of seed is produced. This seed matures quickly and is soon shed. Seed should be collected when only a few achenes are black; the maturing green seed turns black within twenty-four hours of harvesting. As a matter of interest, I sowed immature green seed (using my Bog Method) as soon as the seed was harvested as this seed shrivels and dies when stored. Germination occurred at 5 weeks. In Melbourne germination rates appear to be low, suggesting an inhibitor may be present or some factor, such as long exposure to heat, may be required to break dormancy.

Next season I'll try again, sowing more seed from my original batch and seed from cultivated plants, as well as devising a heat regime for both batches of seed. Let's hope this time Earwigs feast elsewhere.

Asteridea athrixioides

(Vic, SA, WA)

by Judy Barker.

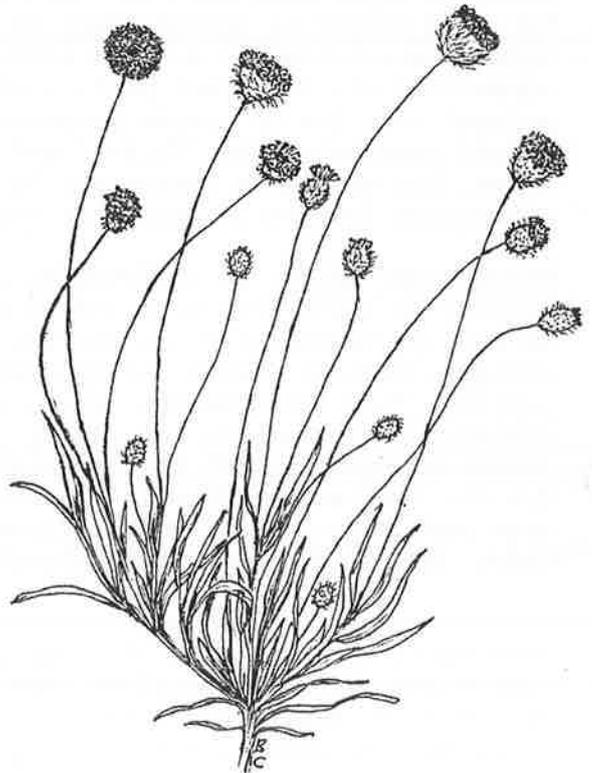
Synonym: Athrixia athrixioides

Wirewort

There are seven species of Asteridea in Australia, all but this one being endemic to Western Australia. A.athrixioides is an annual herb which occurs in sandy soils in mallee, woodland, grassland or coastal scrub.

Seed was collected at Hiltaba in the Gawler Ranges, South Australia, in November '89. It was sown in the following March and good germination resulted in 5-10 days. Seedlings were transplanted into tubes in twos or threes in July, by which time many had disappeared. The cold, wet weather seemed to have had a deleterious effect; leaves browned off, seedlings became limp and ultimately perished.

It was hard to keep the little plants going over winter, but by covering them with a sheet of stiff, clear plastic and keeping the foliage dry a few tubes were left alive. In August they were transplanted into a 20cm pot of HM (5 parts Propine potting mix BC321: 1 part perlite: 1/2 part cow manure: 1/2 part peat moss with IBDU and Osmocote to taste).



Asteridea athrixioides x 2/3

Asterideas have not performed well for me in the past and I had no high hopes for this species, but it turned out to be a most interesting small plant. In September single plants were 9-14cm high and 8-10cm wide. By November the clump in the pot was 18cm high and 20cm wide.

Velvety grey-green leaves, about 4cm long and 0.3cm broad, are produced at the

base in bundles. They are very hairy and soft. Fine, wiry, red-brown stems up to 17cm long arise from the leaf axils, each tipped by an ovoid or globular, green bud with fine brown hairs curving gently out all over it. As the buds develop they become silvery and the yellow corollas begin to appear at the tips. Finally, all the densely packed corollas form a bright yellow button, 11-12mm across, not unlike a *leptorhynchos* in appearance. There are no ray florets, unlike *Asteridea nivea*. The fine brown hairs on the buds are the thread-like outer bracts.

A.athrxioides began to flower in the pot in September and continued until late December. The fruits are small (1mm long), narrowly cylindrical, green-brown with three or four pappus bristles, plumose in the top half.

The common name, Wirewort, is not inspiring. The *Flora of South Australia* (4th. edition), 1986, describes two forms, *forma athrxioides* and, worse, *forma horripes*. I think I have grown *forma athrxioides* but, notwithstanding its name, I warmed to this cheerful, pretty little plant and would love to have it popping up all over the garden.



fruit x 10

Helichrysum milliganii (Tas.)

(*milliganii*, after Dr. Joseph Milligan, 1807-1883, a Scottish surgeon and botanical collector in Tasmania.)

James Baines in *Australian Plant Genera* calls this species the Snow Everlasting, but this name does not appear to be in general use.

H.milliganii is a beautiful and unusual small perennial, not unlike a cactus in appearance. It is endemic to Tasmania and occurs on exposed mountain summits, where it grows on peaty soils.

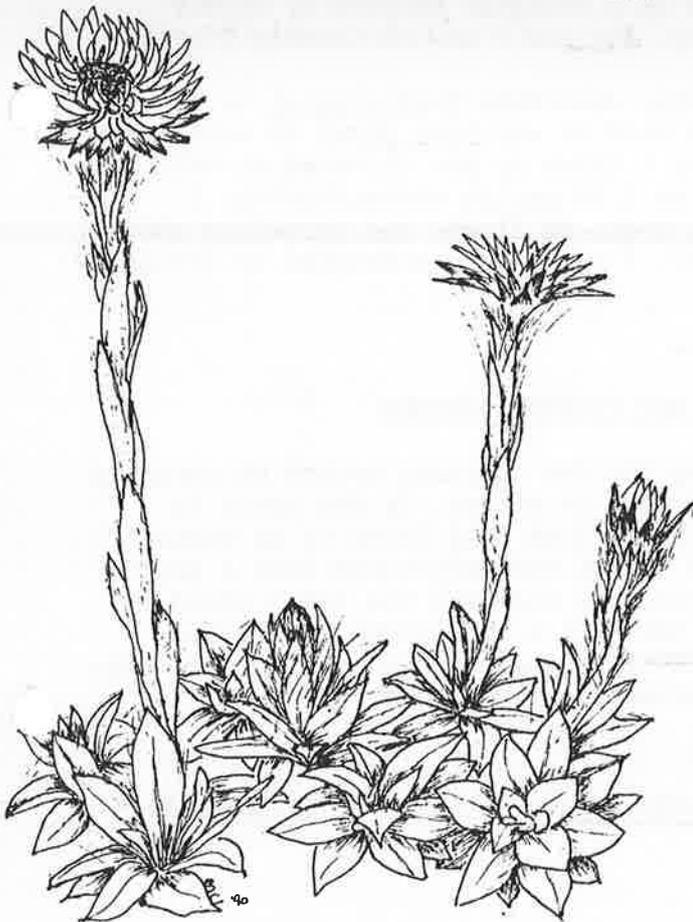
The leaves are stiff, thick and broadly lanceolate, up to 2.5cm long and 1cm broad. They form rosettes at the base and, although they appear glabrous, there is a network of silky hairs connecting them and a tangle of hairs along the margins.

When buds begin to form the rosettes thicken and a fine web of hairs appears at the tip - like a spider's web. Fat, pointed, dark red buds are

soon discernible in the centre of each rosette. Stout, white woolly stems lift the buds 8-15cm above the rosettes. There are numerous broad lanceolate, sessile leaves, longer and narrower than the rosetted leaves, along the stem and pressed against it, which add to the robust appearance.

The buds open to glistening white heads, 3.5-4cm across, usually with touches of crimson at the tips of the radiating outer bracts. It is a beautiful flower-head, but plants are not easy to grow.

Beth Armstrong collected seed in February '88. About six seeds looked mature and were sown in April '88 after spending two nights in the freezer. This was probably not necessary, but I had not been able to germinate this species the year



Helichrysum milliganii x 2/3

before and had decided to try a little cold pretreatment. The freshness of the seed was more likely to be the crucial factor. Anyway, lo and behold, six seedlings germinated over a period of 25-36 days.

Because I was nervous about what to do for the best I just left them until early November, by which time they had grown quite big. They were still in the marg. container in 3 parts perlite : 1 part peat moss. At that point Beth made the brilliant suggestion that I should plant the lot into a larger pot rather than try to separate them. They went into a 25cm terracotta pot of 1 part Propine BC321 : 1 part perlite with the base in a matching saucer of water. This was very successful despite the absence of peat moss which, in view of its habitat, should probably have been included. It has remained in the same pot ever since.

There were no flowers in '88, about four in '89, but it was a picture in '90. The surface of the pot was completely covered by twenty-nine rosettes in late October and two buds had just opened. Between October and mid-December about fifteen heads delighted the eye of the beholder. Although a camel-hair brush was vigorously employed the seed collected was badly damaged by insects. There is very little or none that looks viable. This is a disaster because my lovely little plants sickened and died this January, and now I may be utterly bereft.

Ken Gillanders, a specialist in alpine plants, describes H.milliganii as "a gem that requires a moist, gritty soil". He also said it was best grown in semi-shade in Melbourne, and not to let it get too dry. I think my pot flowered so well because it was in sun from about 10.00 am. to 1.30 pm. in winter/spring. I should have put it in dappled shade when it began to flower and certainly should have repotted it into a peaty mix in '89/'90. I could have attempted to divide it at the same time. Oh, woe is me!

AFTER CARE FOR CUTTING-GROWN PLANTS BY THE BEV COURTNEY METHOD

Daisies usually root in 4-6 weeks when using the Bev Courtney method of striking from cuttings (NL24,p29-30), but may take longer in winter. If the space is needed in the little poly-house and the cuttings look well (even if no roots are showing), the square tubes can be moved out of the poly-house into a protected position where they receive morning sun. Bev suggests the tubes could be placed in a tall-sided polythene vegetable box with a shade cloth cover. She finds the cuttings often show their roots within a week of the move and presumes that photosynthesis is proceeding more efficiently with some sun.

Helichrysum obcordatum and Brachyscome bellidioides

by Elise Walker.

Helichrysum obcordatum

"Grey Everlasting"

A spectacular stand of H.obcordatum was seen during a visit to Genoa Peak in early November. The plants were approximately 1.5m high and growing in fairly dry, shallow soil in open forest. The flowers were yellow with golden bracts, numerous in flat-topped clusters to 10cm across; leaves stiff and rounded, glabrous dark green above, pale grey-green beneath.

Brachyscome bellidioides

I have grown B.bellidioides in a hanging basket and was delighted at the lovely display of pretty white flowers throughout spring and early summer.

Olearia pannosa REPORT ON A RECENT ARTICLE IN THE VICTORIAN NATURALIST

by Alf Salkin.

The June 1990 issue of The Victorian Naturalist has as its Research Report an article entitled, 'Notes on fruit condition, germinability and seedling morphology of Olearia pannosa Hook. (Velvet Daisy-bush)'. The author is M.J.Bartley from the Botany Department of Latrobe University.

Many members have been calling this Victorian species Olearia sp. aff. pannosa, but Nicholas Lander (Perth) has confirmed that they are the same as the collections made by Hooker, so the affin. is superfluous.

It appears that this species is rare in Victoria and is listed as vulnerable - at risk of becoming extinct. It now occurs at twelve sites and even these sites are not secure.

Whilst the plants sucker, few seedlings are found and only 3% of seed is viable, predation being the main factor. The paper then goes on to examine statistically the possible number of viable seed from different sites and the percentage germination using four techniques. Whilst there was little difference between techniques most germinated between 20-40 days. Growth of the germinants was slow and mortality was well above average. From 28 plants only 9 were left alive after two years.

In conclusion the author notes that despite the size of the populations - as low as 35 plants in some cases - it is possible that, given protection, they could survive. The problem is that if plants die or are removed the reduction in the gene pool would make the colony vulnerable. Colonies will be monitored to assess whether there is further decline of the populations. The main threat is destruction of plants or their habitat despite insect predation of seeds and the normally low seed set.

The references may be of interest to members. Apart from our book, Australian Daisies for gardens and floral art, there is:-

Gullan,P.K., Cheal,D.C. and Walsh,N.G. (in prep.), 'Victorian rare or threatened species', Dept. of Conservation, Forests and Lands, Melbourne.

Scarlett,N.H.(1984). 'A register of rare and endangered native plant species in Victoria.' Botany Dept., La Trobe University, Victoria. (Unpublished).

Wisniewski,J.E., Scarlett,N.H. and Parsons,R.F. (1987). 'Rare and Endangered Victorian Plants.4. Olearia sp. aff. pannosa. Victorian Nat. 104:108-14.

If members are interested I have both of the Victorian Naturalist papers and would be willing to photocopy them.

REFLECTIONS OF A "COMMERCIAL" DAISY GROWER

by Bob Magnus.

My first brush with the Daisy Study Group was the discovery of "The Book" in 1988. Subsequently I had a spirited exchange of letters with Judy Barker and received from her many packets of seeds. About a year ago I was accepted officially as a member of the Group. I should say here I make my living largely by selling cut flowers at Hobart's Salamanca Market each Saturday morning, and that horticulture is my life's work.

I joined the Daisy Study Group with great expectations of adding new varieties of flowers to those I already cultivate and approached the whole experiment with the enthusiasm that comes with discovering something NEW..... Unfortunately,

now after eighteen months I've found actually very few of the daisies suitable as cut flowers, at least for commercial purposes, and I'd like to share some of my experiences here:-

Ideally, a subject suitable for cut flower culture, apart from being intrinsically attractive and having acceptable vase life, should be easy to propagate in commercial quantities and be repeat flowering, i.e. cut and come again.

It should be amenable to culture, respond to irrigation and fertilizers (cut flowers after all are almost all water) and most importantly have nice, straight stems 30-40cm long.

Unfortunately, many of the native daisies are flowering in spring when there are large numbers of other flowers available to florists - daffodils, anemones, ranunculus, etc. - and often the natives don't compete too well with their more flamboyant imported cousins.

The most successful species for my purposes have been:-

Helipterum roseum. Autumn planted, these grew slowly through winter. I have covers ready in case of snow. They crop heavily and consistently for three months, September to November. Spring planted seed yields smaller flowers for a shorter period. These are excellent both dried and fresh, however, it takes many stems to really add something to a bunch of flowers. The dark rose-pink form I find the most beautiful.

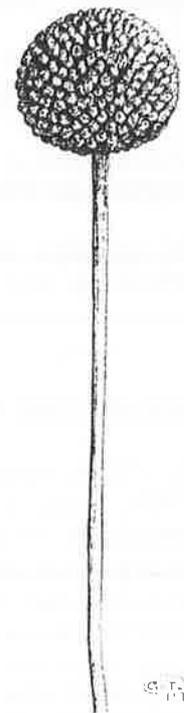
Helichrysum bracteatum 'Monstrosum'. This is the most popular and best known Strawflower or Everlasting. It's a bit questionable if these can strictly be called natives as they have been so manipulated by large seed firms. Well grown plants grow to 1½m and, if started in autumn, will bear from September until the following winter if given sufficient water and fertilizer. I find they respond magnificently to these additions and pump out literally hundreds of flowers if grown in rich, well manured ground. A packet of seed gives many colours, however, I usually perpetuate my favourite colours (white and pale pink) from cuttings struck from the almost exhausted plants in late autumn. These strike easily in sand or open ground and grow away well in spring.

Of the many seeds I have received from the Daisy Study Group the following have been successful in one way or another:-

Helipterum anthemoides (Qld. form). I've found it to be quite perennial, bearing small but charming everlasting, white, single flowers on straight stems from September until Christmas.

Helichrysum semipapposum group. Of these I have about six, but only one (the Grampians form I think - the name is lost) is really suitable. It grows to about ½m, with nice firm straight stems and clusters of terminal yellow buds. It flowers almost continuously from early spring till late summer if given adequate water. Others are very floppy, therefore unsuitable.

Craspedia species. These I consider to have possibly the most potential of any of the daisies. Unique flowers last remarkably long in the vase and dry perfectly on rigid, long, straight stems. I have Craspedia chrysantha and C.globosa. C.chrysantha is small, to ½m, with bright yellow ball flowers, while C.globosa grows to 1m with large, round, yellow balls 20mm across. They both bear regularly, but not heavily, all summer if given sufficient water (they are after all bog plants). Easily propagated. My first seeds came from Judy Barker and subsequently I propagated by division in spring. I hope to build up numbers of C.globosa to several hundred plants. Snails love them!



x 1
C.globosa

Helichrysum subulifolium. A very cheeky, bright yellow, small helichrysum. It grows easily from autumn sown seed and bears heavily in spring. It has small 20mm everlasting flowers and seems to handle the cold very well.

Ammobium alatum. Depending how you look at it - a floppy, untidy weed with insignificant flowers or an invaluable garden gem. I vacillate between these two extremes. My original seed came from U.K., but last year I obtained Ammobium alatum 'Grandiflorum' from U.S.A.. If you really stretch your imagination it just may be a tiny bit 'Grandiflorum'. Nevertheless, if grown properly Ammobium alatum is a very giving plant. It should be grown through a 15cm x 15cm flower mesh suspended horizontally 1m above ground level; this gives nice straight stems.

I pick it when the top flower on each stem shows yellow. It tends to flop when used fresh, but bashing the stems and standing them in deep water overnight seems to sort out this problem. Dried we find it very successful.

Helichrysum acuminatum does very well for me. Rich yellow-orange flowers with very double bracts. Unfortunately, the stems are a bit short, but suitable for smaller posies. It flowers from September to January and is easily multiplied by division.

Lastly I have a Helichrysum bracteatum cultivar collected locally. This makes a robust bush to 1m and bears copious quantities of yellow daisies for ten months of the year. The winter flowers exhibit "tiger" striping and in summer are bright "Lemon Butter" yellow. This strain is unbelievably prolific and responds well to water and fertilizer. Unfortunately it doesn't dry well as it invariably reflexes even when picked in bud, and centres darken to dirty brown.

I'm always on the lookout (unashamedly) for other prolific, easily grown daisies and would like to hear from anyone, either directly or via the Study Group, who may have something suitable.

(Woodbridge, Tasmania, 7162)

GERMINATION of Ixodia achillaeoides

by Beth Armstrong.

Visiting the Grampians after the 1983 bushfires I was amazed by the prolific regeneration of the ixodia - beautiful healthy seedlings everywhere. My germination of ixodia seed had been slow and meagre so I wondered about the influence of fire.

Seed containers were a problem - I could hardly make a fire on top of a plastic pot. I made a pot liner of two layers of aluminium foil (plus drainage holes), filled it with mix and seed, and removed the foil with its contents to light the fire.

I used a seed mix of 4 parts perlite to 1 part peat. The seed (collected at Anglesea) was scattered on top and firmed in by hand - not covered - four pots in total. Two pots were put aside and two had a pile of dry gum twigs and leaves piled on top and burnt. At this stage I felt sure that the seeds would burn so close to the fire.

In nature bushfires are infrequent, so there must be a large amount of seed in the lower layers of the soil - perhaps only the covered seed survives to grow.

Seed was planted 7th.May '90. Results as follows:-

BOTTOM HEAT		OUTSIDE	
FIRE	NO TREATMENT	FIRE	NO TREATMENT
4 plants in 60 days	3 plants in 60 days	6 plants in 60 days	1 plant in 60 days
0 " " " 120 "	4 " " " 120 "	3 " " " 120 "	1 " " " 120 "
4	7	9	2

Conclusion: no conclusion.

- But 1. the seed was not all destroyed,
- 2. bottom heat does not seem to be a factor.

Question: was the fire hot enough and did it last long enough?

Project for 1991: try covering seed and using a hotter and longer fire.

Forecast: I can see endless pots, lined with foil, covered with charred sticks.

Brachyscome angustifolia var. heterophylla - PROBLEMS IN IDENTIFICATION

by Judy Barker.

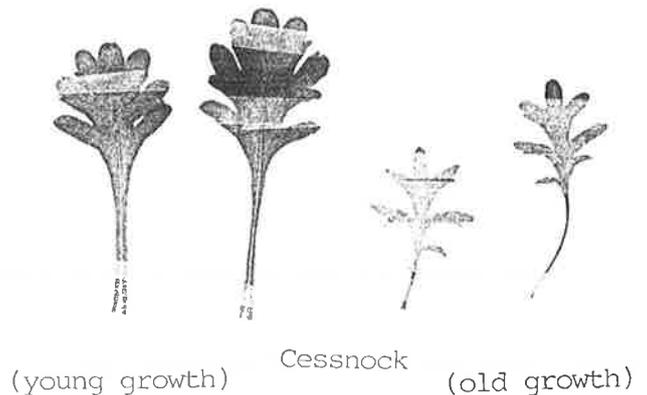
For some time the Study Group has grown a number of forms of plants we have called B.angustifolia var. heterophylla. They are all small perennials, usually suckering, with mauve or mauve-pink heads and lobed leaves. The fruits are quite thick, brown, 2-2.5mm long by 1mm, with flattened tuberculate faces, a conspicuous margin, a narrow wing and an obvious pappus. On the whole this variety has performed well; some forms have proved more suitable for certain purposes than others, but there is something to be said for all of them, and I have found them fascinating. Seedlings have generally become easier to grow than their parents and are often different from them.

It is possible that we have been dealing with more than one species.

The forms we have grown originated from Mt.Drummer, Sydenham Inlet, Bemm River, Wangrabelle (Joy Cook's Large), Timbillica and Lind Highway - all areas in southern NSW and north-eastern Victoria - from Killawarra (Vic), Trunkey, Tea Gardens and Cessnock (NSW) and a form from Australfora Nursery whose origin has not yet been recalled.

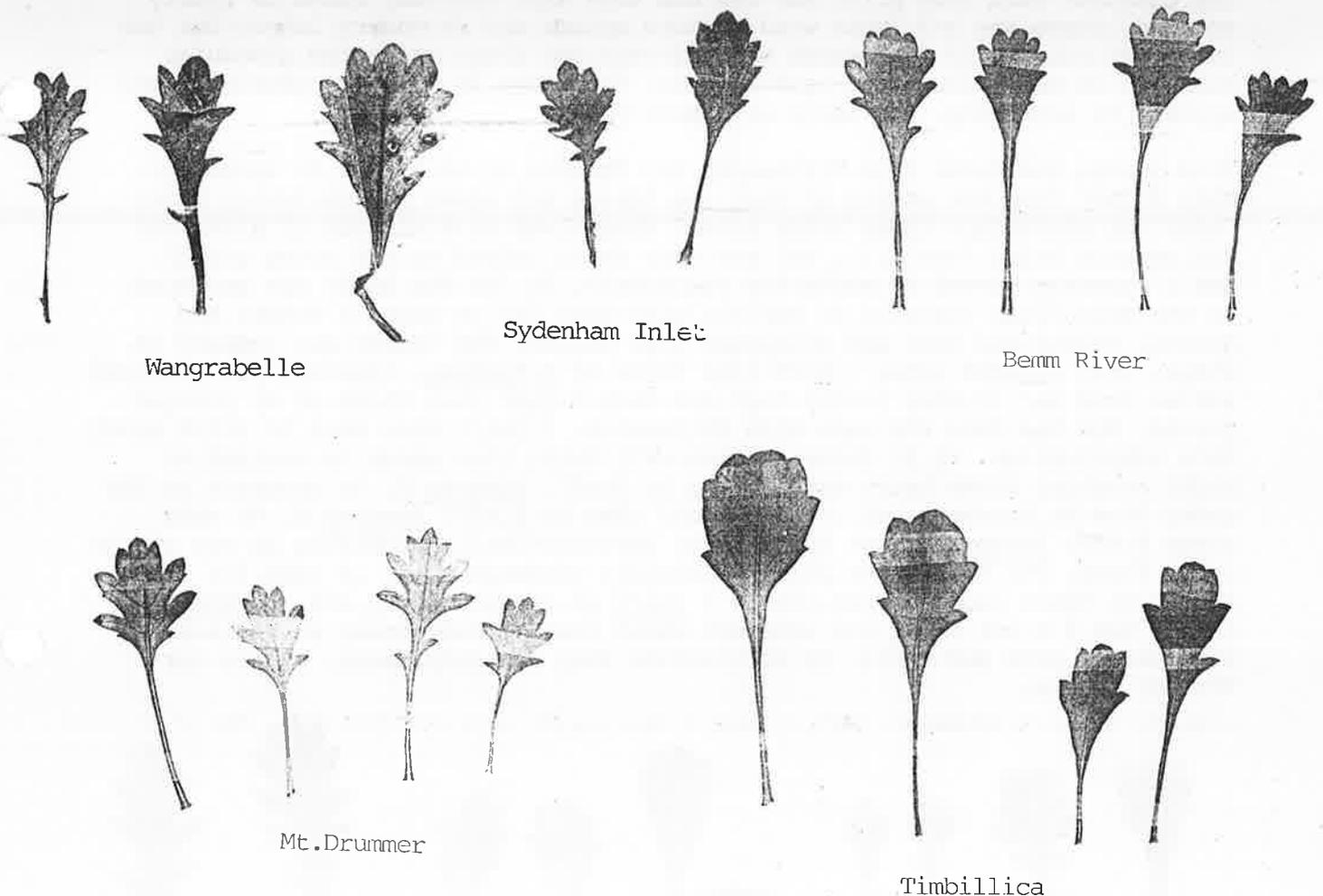
I began to question the identity of these plants because whenever I asked Dr. Short about var. heterophylla he added the phrase "whatever that may be". Also his published description of B.formosa in Muelleria 6(6), 1988, includes the following statement:- "B.formosa appears to have close affinities with another, apparently unnamed, taxon from eastern Victoria and southern New South Wales. Collections of this taxon (e.g. Forbes 512, Walsh 1214, Walsh 1492 - all at MEL) are commonly and erroneously referred to B.angustifolia A.Cunn. var. heterophylla (Benth.) Davis and B.petrophila Davis."

With the help of other members I have tried to do some sorting out, but it is not easy. Since I started to grow them I have kept stock plants in large pots and have repotted divisions each year. In some cases there seems to be great variation in leaf shape within the forms. For instance, the leaves of the Cessnock form vary greatly. It may be merely the difference between new and old growth, but seedlings may have arisen in the pots from cross-pollination with other forms. Then, when I have innocently divided the growth, I may have included hybrids with the original growth. At one stage I was trying to collect mature seed so I put all the pots together in one area. This certainly increased the amount of mature seed produced, but has left me unsure of what has crossed with what. At this juncture we could pause to reflect upon the difficulties of scientific observation in gardens.



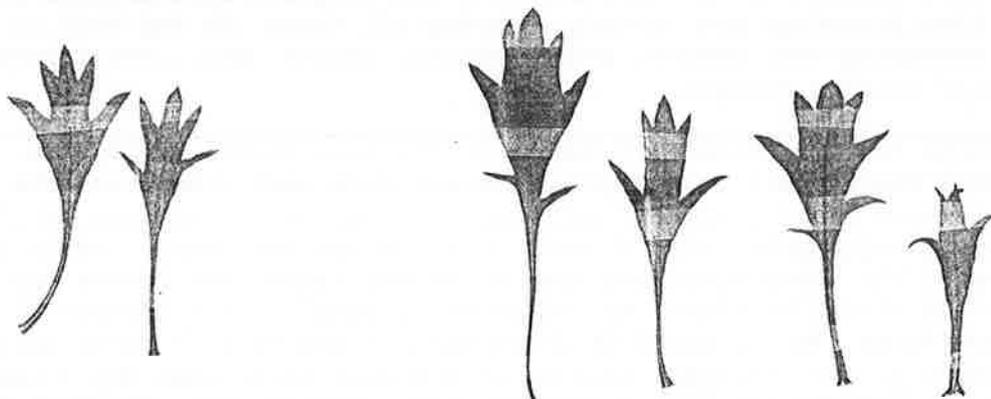
In the first year I sowed the seed (1989) the resultant seedlings were not very different from the parents (see NL24,p.21), but last year's seedlings displayed much more variation. Pot culture, with the frequent applications of fertilizer, will also introduce new factors. Keeping all these ifs and buts in mind, I have been comparing leaf shapes, growth habits, fruits, etc., and trying to see if a stable pattern emerges.

The forms from Mt.Drummer, Sydenham Inlet, Bemm River, Timbillica, Wangrabelle and Lind Highway all look a bit different from each other, but the leaf blades are all more or less rounded or obovate in outline. There are usually 7-9 lobes; the lobes are regular with rounded tips and are not deeply cut in towards the mid-vein. The lobes sometimes have secondary teeth. The leaves and flowering stems are almost hairless; an occasional glandular hair appears on the mid-ribs of some forms. When I asked Dr.Short what we should call these entities he suggested B. aff. formosa. Looking at the pots later that day I was surprised I had not noticed how like B.formosa they actually were. The main differences seemed to be that B.formosa had larger heads on shorter flowering stems and the leaves were of a thicker texture.



B.angustifolia var. heterophylla was described by Dr.Gwenda Davis in 1948 in the Proceedings of the Linnaean Society,NSW, 73, p.162-3. She said it had 1-5 acute lobes in the top part of the leaf blade. (She also said it had short, glandular hairs, but let us leave that aside for the moment.) The forms we have grown that look like that are only two - Tea Gardens and Austraflorea. The leaves have blades that appear longer and narrower than those of B.aff. formosa, the teeth are fewer (2-5), more acute and cut deeply in towards the mid-vein. The leaves look glabrous; but under the microscope a few glandular hairs can be found, mostly at the bases of the young leaves or sparsely along the margins. The stems are upright at first, but as they elongate they become top-heavy, sprawl along the ground and then turn up again as they produce the heads at the tips.

These plants sucker, but not vigorously, and so far the heads are more pink than mauve. All the plants in the B.aff. formosa group sucker with much greater enthusiasm, and the heads are more mauve.

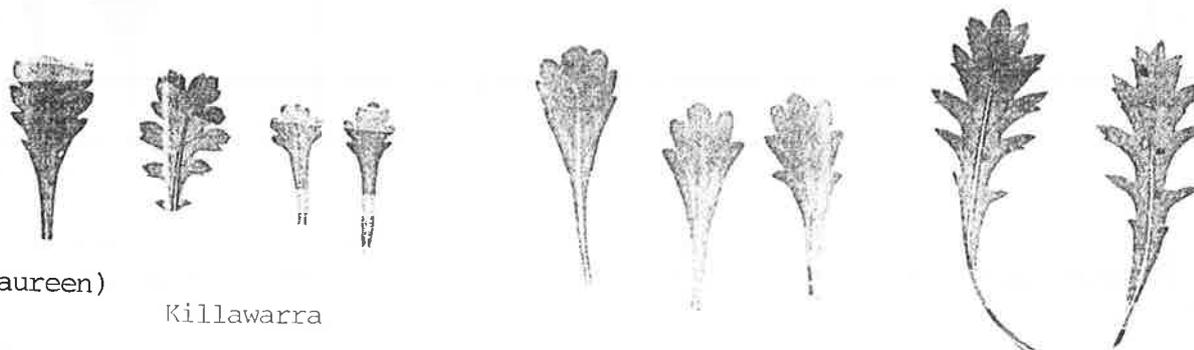


Austraflora

Tea Gardens

The Cessnock form (see p.10) has two bob each way. The leaf blade is fairly rounded, there are 5-7 lobes with rounded apices and secondary lobes, but the lobes are cut deeply in towards the mid-vein and there are a few glandular hairs to be seen around the leaf margins. This form is compact, prostrate and spreads by suckering. The heads are mauve-pink.

This leaves the forms from Killawarra and Trunkey to be fitted in somewhere. They differ from the others in that the leaves and stems are obviously hairy. Under the microscope these hairs reveal themselves as a mixture of glandular and septate hairs (see p.1), and are very dense indeed on the young growth. Small rosettes spread by suckering vigorously. So far the heads are produced in one main flush (usually in spring) with very few or none in summer and autumn. Plants die down and disappear over winter. The leaves are rounded in shape, with rounded lobes - more like those of B.formosa. (Maureen has produced leaves from her Trunkey plants that are much bigger than those of my younger plants. She has done the same with Killawarra. I don't know what to think about this complication. Is it doing a Cessnock?) Until this genus is revised we might consider these hairy entities to be B.aff. formosa B, in contrast to the group from Mt.Drummer, etc., which would then be B.aff. formosa A. At this stage B.aff. formosa B does not look as horticulturally promising as any of our other forms, but Killawarra plants certainly produced a lot of seed for the number of heads produced per plant. I think it crosses with B.aff. formosa A forms, but I'm not being too vehement about that. Flower-heads at Killawarra were mauve, pink and white. In cultivation they are only mauve, as are our Trunkey plants.



(Maureen)

Killawarra

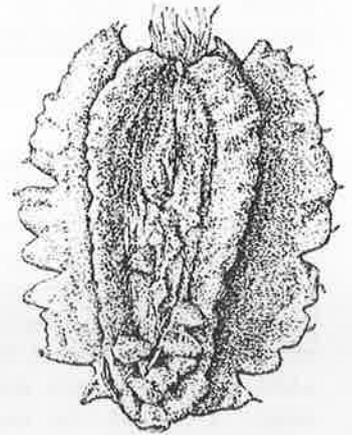
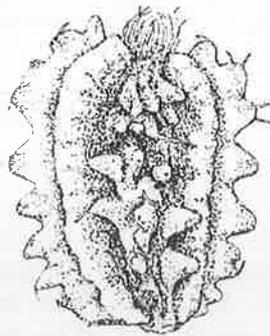
Trunkey

Trunkey (Maureen)

COMPARISON OF FRUITS

There is not much to choose between the fruits of B.formosa and B.angustifolia. Gloria Thomlinson is drawing brachyscome fruits for us with superb accuracy, so I asked her opinion. She said B.formosa was bulkier generally. It is usually

larger too, 2-3mm long and 0.9-1.4mm broad (compared with B.angustifolia, 2-2.2mm long and 0.9mm broad). Both have raised, crimped margins, narrow wings and a conspicuous pappus. The faces are flattened and covered (more or less) with tubercles.



B.angustifolia var. angustifolia x 20

B.formosa x 20

Tea Gardens x 20

Fruits collected from my Tea Gardens plants this year have much broader wings, but are otherwise similar. Before I realised there might be two species involved I had been bunging all seed collected from "var. heterophylla" into one envelope, but old fruits collected from Sydenham Inlet garden plants (which equates to B.aff.formosa A) in '84 yield a generally similar picture. They are cream in colour so may not be mature. I also found some fruits from Killawarra pots which are golden brown to brown, and 2.5mm long by 1mm broad.

What we really need are fruits and specimens from the original habitats for studying, but in the meantime we are producing valuable garden plants with heaps of pretty flowers. Our problem is to put names to them. This article is merely an exploratory foray. If anyone can add any information we would love to hear from them.

My thanks to Beth, Bev, Esma and Alf, and Maureen for their help. This article does not necessarily represent what they think about the subject.

LETTER FROM THE U.K.

by Jeff Irons.

Just a couple of thoughts on seed germination:

1. H.davenportii - could the lack of success with germination be anything to do with the diurnal temperature cycle?
2. Covering seed. This year I tried covering half the surface of each seed pot with grit, leaving the other half uncovered. It didn't make any difference with Olearia frostii or with celmisias, both Aussie and N.Z..

Plus 3. Growing on. Have members thought of growing plants in drain-pipes? I use earthenware land-drains for Aciphyllas. The original idea was that the pipe would accomodate the carrot-like root and give the dry 'collar' which is necessary here in the winter. Nevertheless the method should prove useful in Australia for sandplain plants.

Plus 4. I am growing a plant called Helichrysum selaginoides. It was obtained from a Scottish nursery. The word "called" is used because H.selaginoides is presumed extinct in the wild. To my untutored eye the leaves fit the description given in Curtis' Student's Flora of Tasmania. However, I shall have to wait till it flowers, then send specimens to Tasmania for confirm-

ation. When he was in England Lyn Meredith (National Botanic Garden) saw a plant in Cambridge which was thought there to be H.selaginoides. It was not.

There isn't much in the garden now; a few late flowers on Brachyscome nivalis, the same on Helichrysum bracteatum, precocious flowers on the pink Olearia phlogopappa.

(12/11/90)

SURPRISE GERMINATION

by Judy Barker.

On 21st. January I sowed the seed we had received from King's Park, together with some of the more recalcitrant species such as Brachyscome lineariloba and B.dichrosomatica, Helichrysum davenportii (plus and minus pappus) and Helipterum polygalifolium. Each pot was covered with a single layer of small blue metal chips as suggested by John Colwill (NL28,p.45). All the pots were put down the side of the house against a brick wall facing north and with no watering whatever. I hoped the heat over summer/early autumn would crack the testa and some species would germinate (in due course) when all the conditions were just right.

Overnight on January 23rd. we recorded 48mm of solid rain. Lo and behold, seven days after sowing three species had germinated - B.ciliocarpa, Helipterum condensatum and Myriocephalus helichrysoides. It is true that we have had a very mild period from mid-January to mid-February, but they obviously cared not at all about day length, nor were they interested in survival under the conditions provided. What if I had not passed by for weeks? Nothing else has moved at all, but there has been no rain since. The three pots now sit in 3cm of water, changed daily. More seedlings are appearing and look very healthy.

Natalie Peate has suggested these species must be ephemerals - just seizing their chances. I have no theories, but think this method will do me.

FEBRUARY MEETING REPORT

HYBRIDS

On February 5th. members were asked to bring any hybrids they had to the meeting.

Maureen Schaumann brought two pots that looked like B.multifida, one with mauve heads and the other with lemon heads. Her story went that she had seen a cluster of white-flowered B. multifida in a Merimbula nursery in November '89. She purchased the only pot in which the heads looked soft pink. Fertilisation must have occurred in the nursery because she was collecting seed even before she arrived home. She sowed the seed and potted up the seedlings, one to a pot. Most of the seedlings have mauve flowers, some are just lemon, and some are mauve and lemon.

But the foliage is different. The mauve ones have the typical leaves of var. multifida, but the lemon ones vary in shape. Some are narrow, 1cm long and 0.2cm wide, with two teeth at the tip and two at the side, while others are pinnatisect with six lobes. In the pot the plant looks like the cushion form in that the foliage appears bunched. The leaves are not straight, the tips curve under. The flowers are smaller, about 1cm across.

Natalie Peate brought ten or so hybrids which had arisen in pots in her nursery. She had left a few pots of B.segmentosa unchaperoned in the midst of a variety of pots containing other innocent Brachyscome species. Some of the hybrids were rosettes with large, pale yellow heads. Natalie thought B.segmentosa may have crossed with the species we call B.curvicarpa (yellow). There were many other interesting combinations.

Esma showed us six pots - five like B.ciliaris and one like B.spathulata. She said she started with a plant she had identified as a B.dentata/B.ciliaris cross. It was a bushy plant, 30cm high and 30cm across. It produced white heads, about

2.5cm across, on stems 15cm long. She collected approximately two mature fruits per head. The fruit resembled B.dentata, but the wing was not so indented. She sowed the seed and the six pots displayed were the result.

The first hybrid had been placed at the base of the patio where her alpine daisies grew. This may have accounted for the seedling like B.spathulata. Within the B.ciliaris types there was much variation; the heads were small or large, mauve or white, and one had ray florets that were narrowed for about half their length, as if they had a basal claw or beak. This one reminded Esma of a podol-epis. The only plant that had produced seed was one of the B.ciliaris types.

Judy Barker brought five pots. One seedling had arisen in a pot sown with B.ptychocarpa seed collected from the garden. It had lilac heads, 18mm across, on long, naked stems, 18-20cm long. The glabrous leaves were pinnatisect and the habit was open and branching. No mature fruits had been produced. She suspected B.melanocarpa x B.ptychocarpa or B.stuartii, both of which had been nearby.

The other four all seemed to have B.angustifolia parentage:-

- One was a strange seedling in the Killawarra stock pot. The leaves were glabrous, narrow, with 3-5 small teeth at the tip. The heads were white, 22mm across, on stems 10-13cm long. The plant was similar in appearance to an upright, pale pink form of var. angustifolia, fondly known to the Group as "Chris Strachan's Mum" and originally sold to that lady as B.graminea.
- One germinated from seed collected from the compact form of var. angustifolia with the bright pink heads. This seedling was compact, but the heads were smaller, mauve and on short stems. The leaves were small, regularly toothed, with 5-9 acute lobes. This plant had few flowers and no horticultural merit.
- The next seedling had arisen from the same seed collection, but was much more attractive. The buds were pink, the heads white with pink reverses, 16-20mm across, on flowering stems 11-18cm long. The leaves were deep green, entire to irregularly toothed. It had flowered in profusion for a long time. B.segmentosa had been in the vicinity. The plant had not yet suckered.
- The last held the most horticultural promise. It was a seedling collected from var. heterophylla plants and could be simply a colour variation. The plant had ascending, dark red stems, tipped with purple-violet heads (82A on the RHS colour chart), 18-20mm across, on stems about 12cm long. The leaves are toothed, with 3-5 acute teeth. It had flowered since early October and had retained its neat habit without the benefit of being cut back. There were no suckers although vigorous new growth sprang from the centre. It reminded Maureen of our plants from Tea Gardens, but the habit was more compact. No mature seed had been produced.

STUDY GROUP NEWS

New Treasurer. Bev Courtney has agreed to be the Group's new treasurer. She runs a small nursery, maintains a beautiful garden, is active in conserving the natural environment in her area, and still finds time to be an enthusiastic daisy grower, writer of articles, and curator of our wild seed bank. We are very grateful that she will be looking after our money too.

CONGRATULATIONS to ESMA.

Of the twenty-eight species of Brachyscome listed as "wanted" by Maureen in NL23,p.14, Esma (and her chauffeur, Alf,) have managed to find nine or ten and at least two that are new and undescribed species. This is a truly remarkable performance because the fewer there are left on the list, the harder they are to find. When last seen she was still plotting expeditions in several different directions and returns by tortuous and circuitous routes.

Members travelling in the vicinity of Kimba, South Australia, are invited to contact the Kimba Group of SGAP. through one of our own members, Christine Lieblich, at 8 Caldwell Drive, Kimba. Phone no. (086) 272 093.

CHRISTMAS BREAK-UP, 1990

We loved our visit to the gardens of Val McConchie at Emerald and of her sister, Faye Candy, at Menzies' Creek. It was not 35°C (as forecast) in the Dandenongs; in fact it was a perfect day. We thank Val and Faye very much, with special thanks to their delightful husbands, Ted and Bruce.

NEW MEMBER

We wish to welcome to our ranks:-

Pat Tratt, Lot 17, Nungurner Road, Metung, 3904.

MEMBERS' OBSERVATIONS

After picking my few flowers of H.diotophyllum last October, another burst of blooms soon followed on all the new growth over summer. My pink form of H.diosmifolium followed suit. Cutting the flowers for drying produced new stems of flowers which, although welcome, turned out to be white instead of pink. **Maureen.**

Some plants look better in pots than in the garden. Val (rather sadly).

New growth of H.scorpioides in a pot is appearing over summer, although the flowers of the second flush are only half the size. This is because the pots are watered. In the wild plants disappear as soon as the ground dries out.

The heads of the "two-tone" B.multifida are mostly mauve (with a few two-tone) early in the season, but are mostly white late in the season. Also the mauve heads of B.'Valencia' become pinker over the summer. **Esma.**

Maureen would like members to inform her whether the green seed of brachyscomes you have collected has ripened later, and which species have germinated from it, please. (88 Albany Drive, Mulgrave, 3170. Phone no. (03) 547 3670)

Osmocote needs a temperature of 21°C for the osmotic action to work. If temperatures are below this level it is better to fertilize with IBDU if nitrogen is required or otherwise with dilute Aquasol or Thrive. **Bev.**

MEMBERS' REPORTS

Doll Stanley (from Auburn, South Australia) writes: "This year has been disastrous trying to grow annual daisies as we have a plague of earwigs which are eating every seedling that dares pop its head out of the ground. We don't like using poison sprays. Anyway we have about an acre of ground and that is far too much to be spraying.

We have two sons over on Eyre Peninsula and I agree with (Esma) that the natural vegetation is wonderful. We find that September is a really good month over there, although we can usually find something. One year we came home through Kimba and the daisies - paper daisies, olearias, etc. - were truly a picture."

Chris Targett (from Wyee, NSW) writes: "I am writing to report success at last. It's a moderate success but I happily can report that I've grown Helipterum manglesii and H.roseum from seed, transplanted to a variety of positions in my

garden and they thrived. They have been flowering for 2-3 months; the manglesii has died down and I've trimmed it back. I have kept the roseums flowering well by cutting the flowers just before fully opened - right down at the base. These I've dried by hanging upside down in bunches. Every week I water them with a light addition of Aquasol. This past week the flowers are becoming smaller, so probably it has 'done its dash'. It was interesting that although most of the plants (roseum) were a bright pink, some were apricot/pink, pale pink and white, some with dark centres, some with small dots of black in the yellow centres, and some all yellow centres. Is this usual?

The Craspedia glauca has yet to flower - I suspect its growing conditions are too dry. I am planning to establish a 'damp garden spot'.

My 12 year old daughter has bought a packet of mixed garden seed which included H.roseum and they are also thriving in the garden. Kathy just broadcast hers about - I did the bog method - and so far her plants look healthier than mine, thicker stemmed and faster growing.

Gloria Thomlinson (from Shepparton, Victoria, 14/11/90) writes about collecting seed from B.campylocarpa C. "I noticed that two heads seemed to be elongating and when I touched them the central achenes just came away. The cone-shaped receptacle prompted me to wonder if it had moved upwards. I then cut an immature one and the dry one transversely to see the difference. None, except one was fleshy and the other dry. I concluded that drying released the top ones first so allowing the rest to follow."

Colleen Simpson (from Hope Valley, SA, Feb.'91) writes: "I have a Helichrysum bracteatum seedling from 'Diamond head' growing in my garden. It is a nice one with the flowers retaining their shape without any treatment after being cut if they are picked before seed set. It grows to 2 metres, flowering prolifically all year round. I am enclosing a flower that has been in a vase for at least six months - just picked and placed in the vase. I have been calling it "Curly". I am enclosing seed from this same plant. You may think it a freak, but I like it."

(The head Colleen sent was a rich, golden yellow, 6cm across, and with many layers of bracts which curled up at the tips to produce a cupped effect.)

Lorraine Marshall (from Keon Park, Victoria) writes: "I had excellent germination with the Helipterum albicans Esma sent me, but very few have thrived in the garden. I am considering two factors in this:-

1. Nitrogen draw down from rotted pinebark mulch, though I did add some NPK.
2. pH - I intend to test this to see if it is too acid, though the bed is well drained.

However, Helichrysum acuminatum and Helipterum humboldtianum are flourishing. I have one plant of Helichrysum elatum which is also flowering well.

I have had a lot of trouble establishing Brachyscome multifida, which I found hard to believe. I have added gypsum and other material to my soil, but it is still very heavy in parts and I will work more on this over the next few months."

Barbara Buchanan (from Myrree, Victoria) has sent us an extract by Jane Taylor from Hortus (1989) on "Plants that smell of other things":-

..... Ozothamnus ledifolius, an obese and hummocky shrub of warm green enlivened by tawny buds in spring; the whole shrub gives off an aroma as of prunes stewed with honey. This derives from the sweetly aromatic yellowish exudate (Bean) on the underside of the leaves, whence also the cheerful colouring of the plant.

THE DEADLINE FOR THE JUNE NEWSLETTER WILL BE TUESDAY, 7th. MAY. Please send all contributions to Judy Barker, 9 Widford Street, East Hawthorn, 3123.

SEED LIST:

A full seed list is published in each March newsletter. Please keep this list as additions and deletions only will be recorded in the other 1991 newsletters. **A STAMPED, SELF-ADDRESSED ENVELOPE MUST BE ENCLOSED WITH EACH REQUEST FOR SEED.** Please write to Esma Salkin, 38 Pinewood Drive, Mount Waverley, 3149.

* denotes garden or commercial seed.

Ammobium alatum 'Grandiflorum'*, Asteridea athrixioides (SA), nivea.

Bedfordia linearis.

Brachyscome bellidioides*, campylocarpa C*, ciliaris var. lanuginosa*, curvicarpa*, diversifolia var. diversifolia*, graminea, halophila*, iberidifolia*, melanocarpa*, nivalis, ptychocarpa*, spathulata*, stuartii*, tadgellii*.

Calocephalus brownii, citreus*, platycephalus*.

Calotis ancyrocarpa, erinacea, inermis, multicaulis, xanthosoidea (all sw Qld.).

Celmisia asteliifolia (Vic.), Cephalopterum drummondii (WA), Cotula sp. (SA).

Craspedia glauca.

Erigeron pappocromus, Erodiophyllum elderi (SA), Erymophyllum tenellum*.

Helichrysum acuminatum*, (Falls Ck.), adenophorum var. waddelliae* (Snowy Mtns.), blandowskianum (Carlisle River), bracteatum (Ebor, Patterson's Cutting, Siam, Swift's Creek, Barrington Tops*, hybrids - lemon, pink, white, mixed colours), davenportii*, elatum* (Pambula), hookeri*, leucopsidium*, lindleyi*, obcordatum (Vic), papillosum*, podolepidium (NSW), pterochaetum (sw Qld), purpurascens*, rogersianum*, scorpioides (Gippsland coast), subulifolium*, viscosum.

Helipterum albicans ssp. albicans var. albicans, anthermoides* (Higgins Pl., Qld), charsleyae* (NT), chlorocephalum*, corymbiflorum*, diffusum*, fitzgibbonii*, floribundum*, humboldtianum*, involucratum*, manglesii*, margarethae* (WA), microglossum, molle (sw Qld), polygalifolium (NSW), praecox*, pygmaeum, roseum*, roseum var. nigropapposum*, splendidum*, stipitatum*, strictum, stuartianum* (NSW).

Hyalosperma glutinosum ssp. venustum (syn. Helipterum venustum), praecox*, semisterile (mallee) (syn. Helipterum jessenii).

Ixiolaena sp., sp. aff. brevicompta, Ixodia achillaeoides (various forms).

Lagenifera huegelii*, Leptorhynchos squamatus.

Minuria cunninghamii (NSW), denticulata, integerrima (NSW).

Myriocephalus guerinae (WA), stuartii (SA).

Olearia frostii (Falls Ck.), phlogopappa, pimeleoides (NSW), rudis, tenuifolia*, viscosa (Tas).

Othonna gregorii (SA), magnificus* (SA).

Podolepis canescens, gracilis*, jaceoides, lessonii, neglecta (NSW).

Rutidosis helichrysoides (sw Qld). Schoenia cassiniana (SA).

Streptoglossa liatroides (SA), sp., Vittadinia cuneata complex (sw Qld), sp..

Waitzia acuminata, aurea, citrina.

SEED DONORS:

Many thanks to Nell Anderson (Gilgandra), Judy Barker, Hilary Coulson (Arid Zone Institute, Alice Springs), Joy Greig, Linda Harrison, Colin Jones, Bob Magnus, Steve McAlpin (NT), Alf and Esma Salkin, Dr. Philip Short (National Herbarium of Victoria), Colleen Simpson, Ian Taylor, Gloria Thomlinson, Elise Walker,

SUBSCRIPTIONS

Subscriptions are \$5.00 per year or \$10.00 for overseas members. Cheques should be made payable to the Australian Daisy Study Group and forwarded to the Leader. FEES ARE DUE ON 30th. JUNE, 1991. This is the first of two warnings.

If you intend to resign please inform Esma as soon as possible because there are several prospective members on her waiting list.
